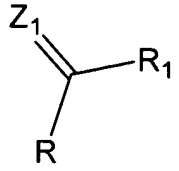
CLAIMS

What is claimed is:

1. A pharmaceutical composition comprising a pharmaceutically acceptable carrier or diluent and a compound represented by the following structural formula:



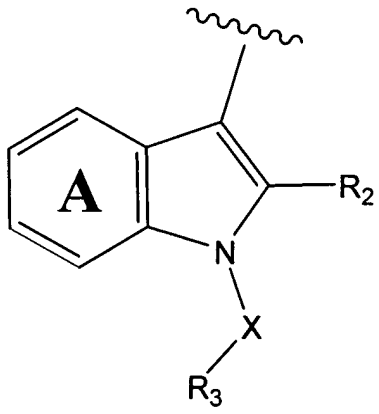
;

or a pharmaceutically acceptable salt thereof, wherein:

R_1 is a substituted or unsubstituted 2-imidazolyl group which is optionally fused to a substituted or unsubstituted aryl group;

Z_1 is =O, =S, =N-OR_{11} or =NR_{11};

R is represented by a structural formula selected from:



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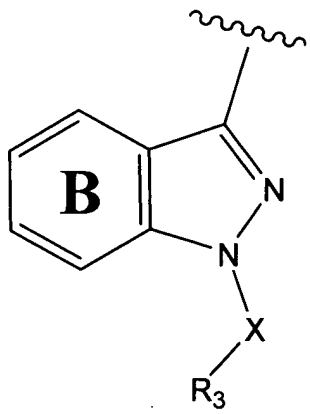

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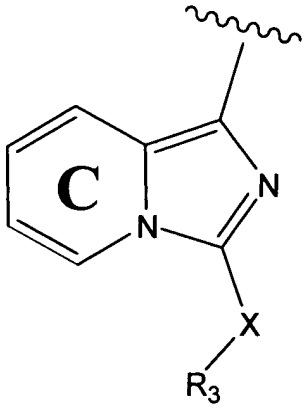

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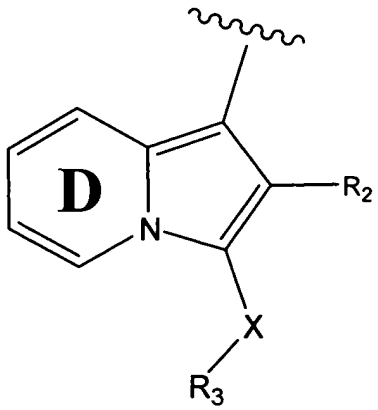

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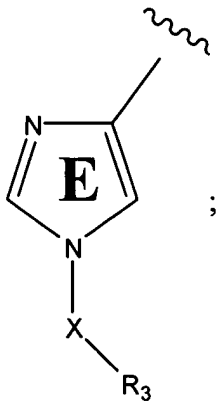

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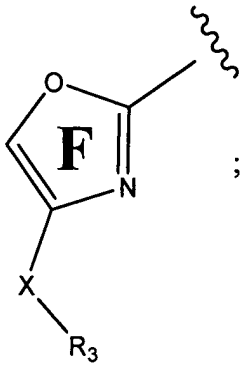


;

and ;

Rings **A**-**F** are independently substituted or unsubstituted and are optionally fused to an aryl group;

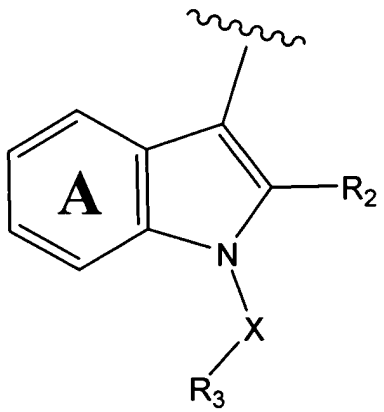
R_2 is -H, a substituted or unsubstituted alkyl group or a substituted or unsubstituted aryl group;

R_3 is a substituted or unsubstituted aryl group or a substituted or unsubstituted aliphatic group;

X is a covalent bond, $-C(R_4R_5)-$, $-N(R_4)-$, -O-, -S-, -S(O)-, $-S(O)_2-$, -C(=O)-, $-C(=O)-N(R_4)-$ or $-N(R_4)-C(=O)-$;

R_4 and R_5 are independently –H, an aliphatic group or a substituted aliphatic group; and

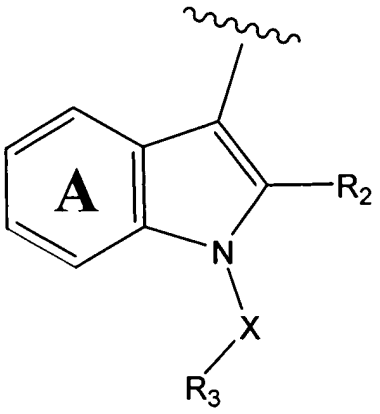
R_{11} is -H or a substituted or unsubstituted alkyl group;



provided that when R is represented by , then X is not -S(O)- or $-S(O)_2-$ and R_3 is not an aliphatic or substituted aliphatic group.

2. The pharmaceutical composition of Claim 1 wherein X is a covalent bond, $-C(R_4R_5)-$, $-N(R_4)-$, -O-, C(=O)-, $-C(=O)-N(R_4)-$ or $-N(R_4)-C(=O)-$ and R_3 is a substituted or unsubstituted aryl group.

3. The pharmaceutical composition of Claim 2 wherein R is represented by a structural formula selected from:



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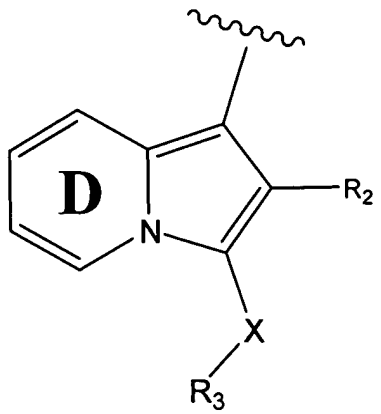
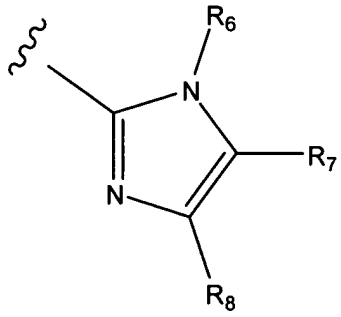


and

4. The pharmaceutical composition of Claim 3 wherein Rings **A**-**F** are a substituted or unsubstituted phenyl group; R_2 is -H; Z_1 is =O; and X is -C(R_4R_5)-, -N(R_4)- or -O-.

5. The pharmaceutical composition of Claim 4 wherein X is -C(R_4R_5)-.

6. The pharmaceutical composition of Claim 5 wherein R_1 is represented by the following structural formula:



;

wherein:

R_6 is -H, an unsubstituted aliphatic group or a substituted aliphatic group, -C(O)R^g, -S(O)$_2$-R^g or -S(O)$_2$-N(R^g)$_2$;

R_7 and R_8 are independently -H, -OH, -Br, -Cl, -I, -F, -OR^a, -O-COR^a, -COR^a,

-CN, -NO_2, -COOH, -SO_3H, -NH_2, -NHR^a, -$N(R^aR^b)$, -$COOR^a$, -CHO, -$CONH_2$, -$CONHR^a$, -$CON(R^aR^b)$, -$NHCOR^a$, -$NRCOR^a$, -$NHCONH_2$, -$NHCONR^aH$, -$NHCON(R^aR^b)$, -NR^cCONH_2, -NR^cCONR^aH, -$NR^cCON(R^aR^b)$, -C(=NH)-NH_2, -C(=NH)-NHR^a, -C(=NH)-$N(R^aR^b)$, -$C(=NR^c)$-NH_2, -$C(=NR^c)$-NHR^a, -$C(=NR^c)$-$N(R^aR^b)$, -NH-C(=NH)-NH_2, -NH-C(=NH)-NHR^a, -NH-C(=NH)-$N(R^aR^b)$, -NH-$C(=NR^c)$-NH_2, -NH-$C(=NR^c)$-NHR^a, -NH-$C(=NR^c)$-$N(R^aR^b)$, -NR^dH-C(=NH)-NH_2, -NR^d-C(=NH)-NHR^a, -NR^d-C(=NH)-$N(R^aR^b)$, -NR^d-$C(=NR^c)$-NH_2, -NR^d-$C(=NR^c)$-NHR^a, -NR^d-$C(=NR^c)$-$N(R^aR^b)$, -$NHNH_2$, -$NHNHR^a$, -NHR^aR^b, -SO_2NH_2, -SO_2NHR^a, -$SO_2NR^aR^b$, -$CH=CHR^a$, -$CH=CR^aR^b$, -$CR^c=CR^aR^b$,-$CR^c=CHR^a$, -$CR^c=CR^aR^b$, -CCR^a, -SH, -SR^a, -$S(O)R^a$, -$S(O)_2R^a$, alkyl groups, substituted alkyl group, non-aromatic heterocyclic group, substituted non-aromatic heterocyclic group, benzyl group, substituted benzyl group, aryl group or substituted aryl group;

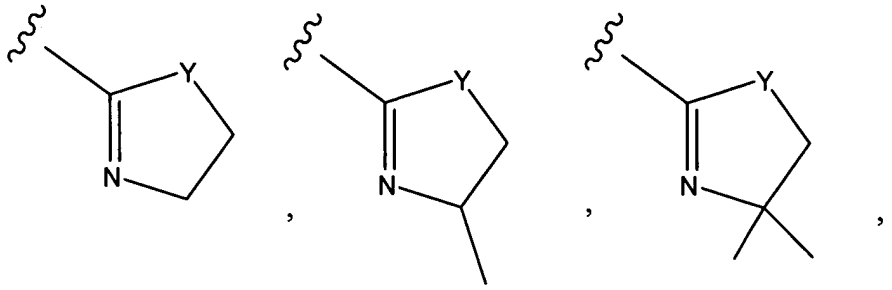
R^a-R^d are each independently an alkyl group, substituted alkyl group, benzyl, substituted benzyl, aryl or substituted aryl group, or, -$N(R^aR^b)$, taken together, can also form a substituted or unsubstituted non-aromatic heterocyclic group; and

R^g is -H or a substituted or unsubstituted aliphatic group.

7. The pharmaceutical composition of Claim 6 wherein:

R_6 is -H, C1-C4 alkyl, C1-C4 hydroxyalkyl, -(C1-C4 alkylene)-O-(C1-C4 alkylene)-tri(C1-C4 alkyl)silane, -$S(O)_2N$(C1-C4 alkyl)$_2$, -$S(O)_2NH$(C1-C4 alkyl) or -$S(O)_2NH_2$;

R_7 and R_8 are independently -H, C1-C4 alkyl, C1-C4 hydroxylalkyl, (C1-C4 alkyl)$_3$-Si-O-(C1-C4 alkylene), pyridyl, C1-C4 alkyl substituted with pyridyl, C1-C4 alkyl substituted with -NH-pyridyl, C1-C4 hydroxyalkyl substituted with -NH-pyridyl, C1-C4 hydroxyalkyl substituted with -pyridyl, -$S(O)_2$-(phenyl), -$S(O)_2$-(tolulyl),



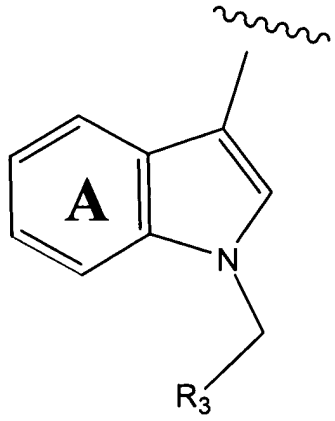
-C(O)-pyridyl, indolyl, -(C1-C4 alkylene)-O-(C1-C4 alkyl), C1-C4 alkyl substituted with -O-pyridyl, -CHO, -C(O)-O-(C1-C4 alkyl), -C(O)-NH-(C1-C4 alkyl), -C(O)-(C1-C4 alkylene)-pyridyl, oxazolinyl, -C(O)-(C1-C4 alkyl), -C=N-NH-phenyl, -C(O)-NH-pyridyl, -C(O)-NH-phenyl, -C=N-NH-(C1-C4 alkyl), -C=N-N-(C1-C4 alkyl)$_2$, -C(O)-NH-(C1-C4 alkyl), -C(O)-N-(C1-C4 alkyl)$_2$, -C(O)-(*N*-morphilino), -C(O)-imidazolyl, -C(O)-NH-(C1-C4 haloalkyl), -C(O)-N-(C1-C4 haloalkyl)$_2$, -CH_2-N_3, C1-C4 alkyl substituted with imidazolyl, -C1-C4 alkylene-NHC(O)-(C1-C4 alkyl), -C1-C4 alkylene-NHC(O)-(phenyl), -(C1-C4 alkylene)-NHC(O)-(tolulyl), -C1-C4-alkylene-NHC(O)-(methoxy, dimethoxy or trimethoxyphenyl); and

Y is –S-, -O- or –N(H or C1-C4 alkyl or substituted alkyl)-.

8. The pharmaceutical composition of Claim 7 wherein R_4 and R_5 are both -H; and R_3 is a substituted or unsubstituted phenyl or pyridyl group.

9. The pharmaceutical composition of Claim 8 wherein Rings **A** and **D** are unsubstituted or substituted with one or more groups selected from -F, -Cl, -Br, -C1-C4 alkyl, C1-C4 alkoxy, -C1-C4 haloalkyl, C1-C4 haloalkoxy, -CN and -NH_2.

10. The pharmaceutical composition of Claim 9 wherein R is represented by the following structural formula:



11. The pharmaceutical composition of Claim 10 wherein:

R_3 is a phenyl or pyridyl group substituted with zero, one or more groups selected from -Br, -Cl, -F, -R^e, -OR^e, -CN, -$COOR^e$, -$N(R^e)_2$, -$CON(R^e)_2$, -NR^eCOR^f, -$NHCONH_2$ and -SO_2 $N(R^e)_2$; and

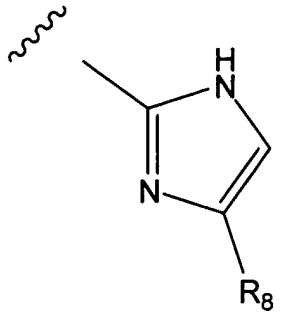
each R_e and R_f are independently selected from -H, alkyl, and substituted alkyl.

12. The pharmaceutical composition of Claim 11 wherein R_3 is a phenyl group substituted with zero, one or more groups selected from -Cl, -F, -R^e, -OR^e, -CN, -NH_2, -$CONH_2$, and -$NHCOR^f$.

13. The pharmaceutical composition of Claim 12 wherein R_3 is a phenyl group substituted with zero, one or more groups selected from -CH_3, -CH_2CH_3, -F, -Cl, -CN and -OCH_3.

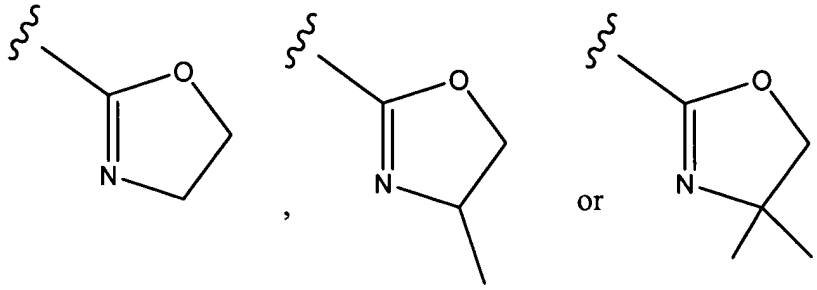
14. The pharmaceutical composition of Claim 13 wherein R_3 is an unsubstituted phenyl group or a phenyl group monosubstituted with -CH_3, -CH_2CH_3, -F, -Cl, -CN or -OCH_3, wherein the phenyl group substituent is at the *para* position.

15. The pharmaceutical composition of Claim 14 wherein R_1 is represented by the following structural formula:



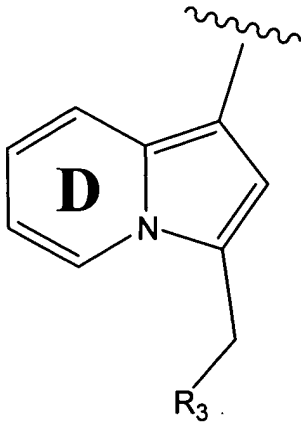
;

wherein R_8 is $-C(O)NH_2$, $-C(O)CH_3$, $-C(O)CH_2CH_3$, 2-pyridyl, $-C(O)OCH_3$, $-C(O)OCH_2CH_3$,



16. The pharmaceutical composition of Claim 15 wherein Ring **A** is unsubstituted.

17. The pharmaceutical composition of Claim 9 wherein R is represented by the following structural formula:



18. The pharmaceutical composition of Claim 17 wherein:

R_3 is a phenyl or pyridyl group substituted with zero, one or more groups selected from -Br, -Cl, -F, $-R^e$, $-OR^e$, -CN, $-COOR^e$, $-N(R^e)_2$, $-CON(R^e)_2$, $-NR^eCOR^f$, $-NHCONH_2$ and $-SO_2\,N(R^e)_2$; and

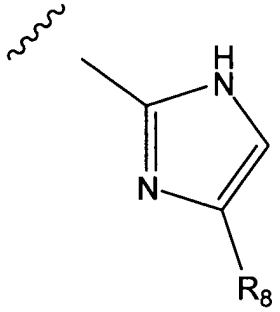
each R^e and R^f is independently selected from -H, alkyl and substituted alkyl.

19. The pharmaceutical composition of Claim 18 wherein R_3 is a phenyl group substituted with zero, one or more groups selected from -Cl, -F, -R^e, -OR^e, -CN, -NH_2, -$CONH_2$ and -$NHCOR^f$.

20 The pharmaceutical composition of Claim 19 wherein R_3 is a phenyl group substituted with zero, one, or more groups selected from -CH_3, -CH_2CH_3, -F, -Cl, -CN and -OCH_3.

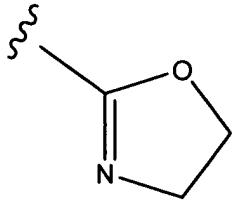
21. The pharmaceutical composition of Claim 20 wherein R_3 is an unsubstituted phenyl group or a phenyl group monosubstituted with -CH_3, -CH_2CH_3, -F, -Cl, -CN or -OCH_3, wherein the phenyl group substituent is at the *para* position.

22. The pharmaceutical composition of Claim 21 wherein R_1 is represented by the following structural formula:



;

wherein R_8 is -$C(O)NH_2$, -$C(O)CH_3$, -$C(O)CH_2CH_3$, 2-pyridyl, -$C(O)OCH_3$, -$C(O)OCH_2CH_3$,



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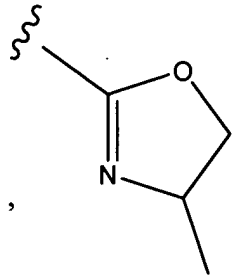
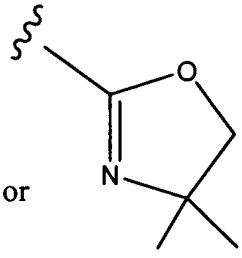
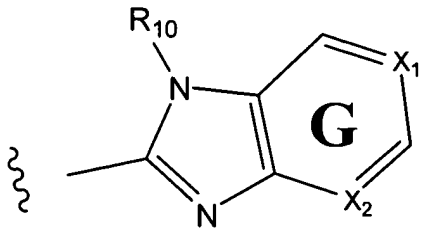


or


.

23. The pharmaceutical composition of Claim 22 wherein Ring **D** is unsubstituted.

24. The pharmaceutical composition of Claim 1 wherein R_1 is represented by the following structural formula:



;

wherein:

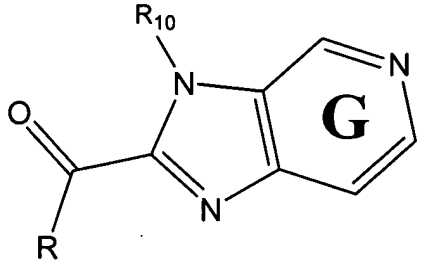
R_{10} is -H, an unsubstituted aliphatic group or a substituted aliphatic group, $-C(O)-R^g$, $-S(O)_2-R^g$, or $-S(O)_2-N(R^g)_2$;

X_1 and X_2 are independently -CH- or -N-;

Ring **G** is substituted or unsubstituted; and

each R^g is -H or a substituted or unsubstituted aliphatic group.

25. A pharmaceutical composition represented by the following structural formula:



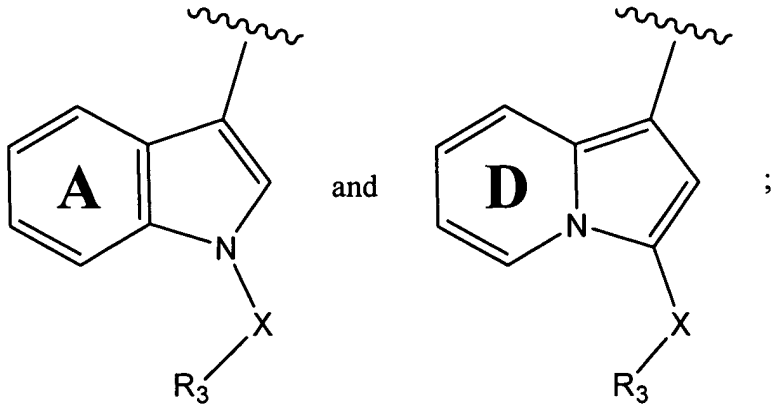
;

or a pharmaceutically acceptable salt thereof, wherein:

Ring **G** is substituted or unsubstituted;

R_{10} is -H or a C1-C4 alkyl group;

R is represented by a structural formula selected from:



;

wherein Rings **A** and **D** are substituted or unsubstituted; X is –$C(R_4R_5)$-, -O- or -NR_4-; and R_3 is a substituted or unsubstituted phenyl or pyridyl group.

26. The pharmaceutical composition of Claim 25 wherein X is –$C(R_4R_5)$-.

27. The pharmaceutical composition of Claim 26 wherein X is –CH_2- and Ring **G** is unsubstituted.

28. The pharmaceutical composition of Claim 25 wherein:

Rings **A** and **D** are unsubstituted or substituted with one or more substituents selected from -F, -Cl, -Br, -C1-C4 alkyl, C1-C4 alkoxy, -C1-C4 haloalkyl, C1-C4 haloalkoxy, -CN and -NH_2;

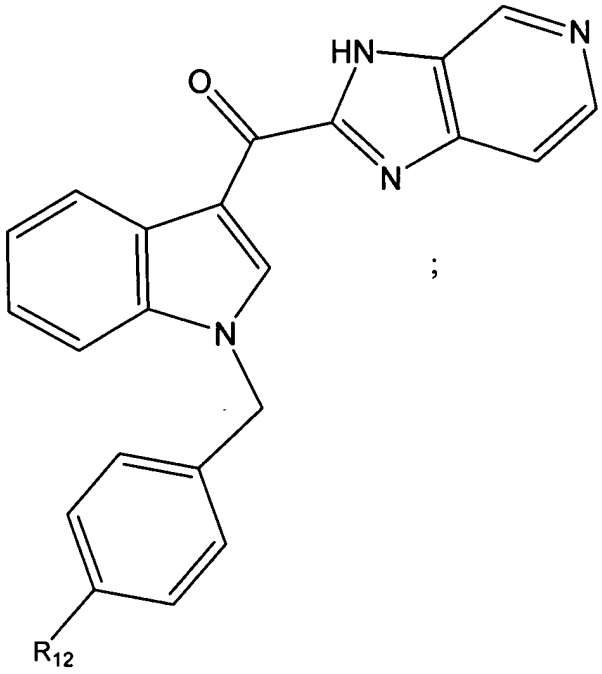
R_3 is a phenyl or pyridyl group substituted with zero, one or more groups selected from -Br, -Cl, -F, -R^e, -OR^e, -CN, -$COOR^e$, -$N(R^e)_2$, -$CON(R^e)_2$, -NR^eCOR^f, -$NHCONH_2$ and -SO_2 $N(R^e)_2$; and

each R^e and R^f is independently selected from -H, alkyl, and substituted alkyl.

29. The pharmaceutical composition of Claim 28 wherein R_3 is a phenyl group substituted with zero, one, or more groups selected from -Cl, -F, -R^e, -OR^e, -CN, -NH_2, -$CONH_2$, and -$NHCOR^f$.

30. The pharmaceutical composition of Claim 29 wherein R_3 is a phenyl group substituted with zero, one or more groups selected from $-CH_3$, $-CH_2CH_3$, $-OCH_3$, -CN, -F, and -Cl.

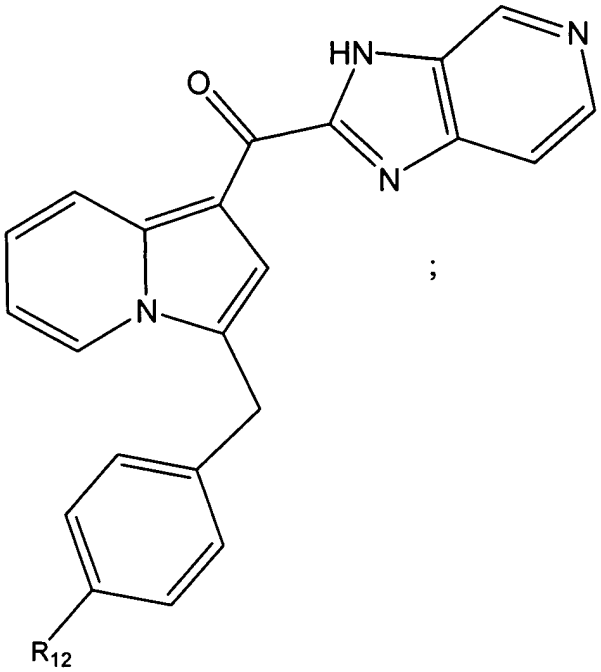
31. A pharmaceutical composition represented by the following structural formula:



;

or a pharmaceutically acceptable salt thereof, wherein R_{12} is $-CH_3$, $-CH_2CH_3$, $-OCH_3$, -CN, -F, or -Cl.

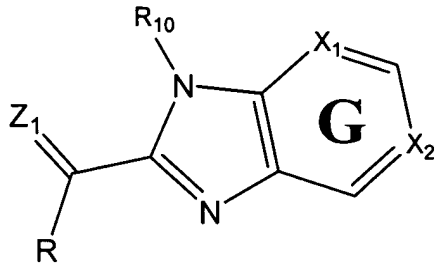
32. A pharmaceutical composition represented by the following structural formula:



;

or a pharmaceutically acceptable salt thereof, wherein R_{12} is $-CH_3$, $-CH_2CH_3$, $-OCH_3$, -CN, -F or -Cl.

33. A pharmaceutical composition represented by the following structural formula:

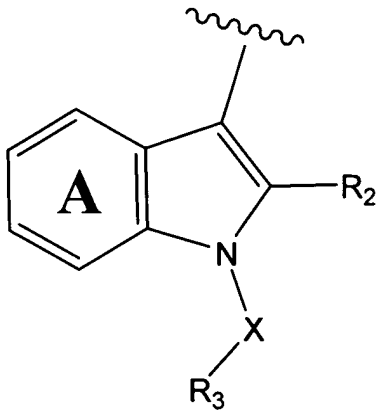


;

or a pharmaceutically acceptable salt thereof, wherein:

Z_1 is =O, =S, $=NOR_{11}$ or $=NR_{11}$

R is represented by a structural formula selected from:



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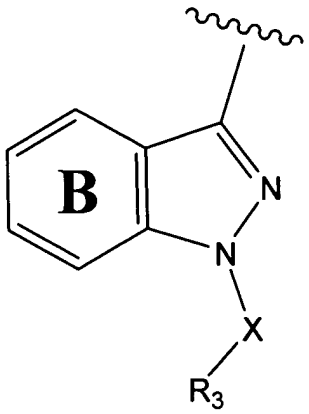

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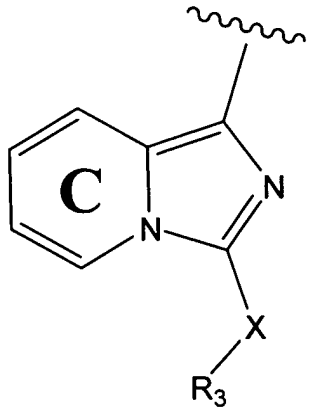

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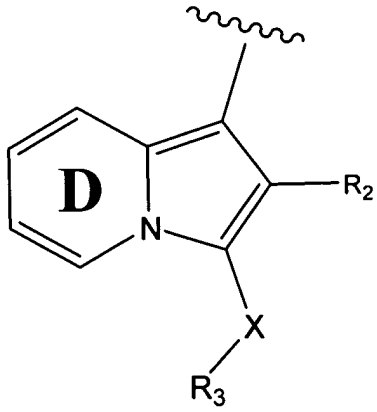

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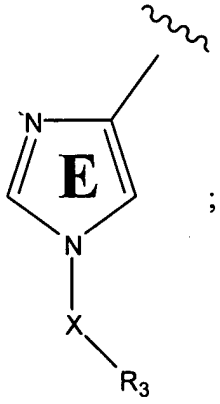

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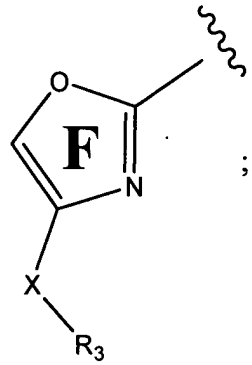

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Rings **A-F** are independently substituted or unsubstituted and are optionally fused to an aryl group;

R_2 is -H or a substituted or unsubstituted alkyl group;

R_3 is a substituted or unsubstituted aryl group or a substituted or unsubstituted aliphatic group;

X is a covalent bond, $-C(R_4R_5)-$, $-N(R_4)-$, -O-, -S-, -S(O)-, $-S(O)_2-$, -C(=O)-, $-C(=O)-N(R_4)-$ or $-N(R_4)-C(=O)-$;

R_4 and R_5 are independently –H, an aliphatic group or a substituted aliphatic group;

R_{10} is -H, an unsubstituted aliphatic group or a substituted aliphatic group, $-C(O)-R^g$, $-S(O)_2-R^g$, or $-S(O)_2-N(R^g)_2$;

R_{11} is -H or a substituted or unsubstituted alkyl group;

X_1 and X_2 are independently -CH- or -N-;

Ring **G** is substituted or unsubstituted; and

each R^g is -H or a substituted or unsubstituted aliphatic group.